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SHOULD DEFIBRILLATION THRESHOLD BE TESTED IN PATIENTS WITH CARDIAC RESYNCHRONIZATION THERAPY-DEFIBRILLATOR IMPLANTATION?

ACC Poster Contributions
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Authors: *Tahmeed A. Contractor, Yoav Michowitz, Tara Bourke, Kalyanam Shivkumar, University of California at Los Angeles/David Geffen School of Medicine, Los Angeles, CA, Michigan State University, East Lansing, MI*

Background: Several clinical trials failed to demonstrate benefit from defibrillation threshold testing (DFT) during implantable cardioverter-defibrillator (ICD) implantation. Patients undergoing cardiac resynchronization therapy-defibrillator (CRT-D) implantation have higher defibrillation thresholds compared to single chamber ICD recipients. On the other hand, the potential risks from testing may be higher in this population. We sought to assess the impact of DFT testing in recipients of CRT-D.

Methods: A total of 256 consecutive subjects who underwent CRT-D device implantation between January 2003 and December 2007 were selected for inclusion. Subjects were divided into two groups based on whether threshold testing was performed during device implantation. Baseline characteristics as well as CRT-D therapies during follow-up were recorded. The success of appropriate shocks was compared between the two groups. The combined event-free survival of death or need for heart transplantation was also compared using Kaplan-Meier time-to-event curves.

Results: Threshold testing was performed in 204 patients ('tested' group; 78.4 % men; mean age 60 years; mean ejection fraction 23%) and was not performed in 52 patients ('not-tested' group; 65.4 % men; mean age 64.3 years; mean ejection fraction 20.9%). Subjects in whom the threshold was not tested were older. Other characteristics including the severity of heart failure were comparable between the groups. After a mean follow-up of 31.6±19.7 months, the proportion of patients with appropriate shocks in the two groups was similar (63/204 [31%] in tested vs 13/52 [25%] in not-tested; p=0.49). The two groups did not differ significantly in the incidence of unsuccessful appropriate shocks (p=1). Death/heart transplantation-free survival was also similar in the two groups (p=0.23).

Conclusions: DFT testing in recipients of CRT-D did not influence the success of device therapy or death/heart transplantation-free survival. This is the first such study done in CRT-D recipients and larger prospective studies are needed to validate or refute our findings.